

## Recovery Plan Action Status

**Plan Name:** Draft Mount Graham Red Squirrel (*Tamiasciurus hudsonicus grahamensis*) Recovery Plan, First Revision

**Plan Status:** Draft Revision 1

**Plan Date:** 27-May-11

**Lead Agency:** USFWS

**Lead Office:** Arizona Ecological Services Field Office

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242-0210 )

Species	Action Priority #	Action #	Action Description	Action Status	Est. Initiation Date	Est. Completion Date	Responsible Parties	Work Type	Labor Type	Action Comments
Mount Graham red squirrel ( <i>Tamiasciurus hudsonicus grahamensis</i> )	3	1.1.1	As appropriate and supported by research (see 3.5.), apply methods developed to control outbreaks of insects and pathogens that cause widespread damage of the remaining conifer forests.	Not Started			Coronado National Forest	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel ( <i>Tamiasciurus hudsonicus grahamensis</i> )	2	1.1.2	Work with Arizona Game and Fish Department to control or eliminate Aberts squirrels in the Pinaleno Mountains, as appropriate and supported by research (see 3.4.).	Not Started			Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel ( <i>Tamiasciurus hudsonicus grahamensis</i> )	3	1.1.3	Work with Arizona Game and Fish Department to control or eliminate non-native ungulates in the Pinaleno Mountains, as appropriate and supported by monitoring (see 5.7.).	Not Started			Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel ( <i>Tamiasciurus hudsonicus grahamensis</i> )	1	1.1.4	Work with project proponents and lead Federal agencies to minimize to the maximum extent practicable, effects of future developments on the Mount Graham red squirrel and its habitat.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Extending 50 or more years

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	1.1.5	Develop and implement a long-term management plan, ensuring Mount Graham red squirrel habitat is managed and maintained in perpetuity.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	1.2.1	Maintain and continue to enforce current vehicle speed restrictions to reduce Mount Graham red squirrel roadkills.	Ongoing Current			Coronado National Forest, Graham County Sheriff's Department	Work type not yet selected	Labor type not yet selected	No change from current condition
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	1.2.2	Maintain and continue enforcement of Arizona Game and Fish Departments statute prohibiting the hunting of Mount Graham red squirrel.	Ongoing Current			Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	No change from current condition
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	1.2.3	Implement methods to reduce predation on the Mount Graham red squirrel, if appropriate and supported by research (see 3.2. and 3.3.).	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Action would begin in FY 6 after research actions 3.2. and 3.3. are completed. This action would extend for 50 or more years thereafter.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	1.2.4	Implement a captive breeding program based on the results of research (see 3.11.-3.13.), if necessary to conserve genetic stock or for production of animals for reestablishment, as appropriate.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	After pilot program, full program is implemented if deemed necessary.

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	2.1	Complete planning for and implementation of the Pinaleno Ecosystem Restoration Project, which will have as an objective, conservation of Mount Graham red squirrel habitat.	Ongoing Current			Coronado National Forest	Work type not yet selected	Labor type not yet selected	\$20K for 1 year, \$50K for 10 years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	3	2.2	Plant conifers of value to the Mount Graham red squirrel in areas impacted by recent fires and insect damage, including West Peak, if necessary.	Ongoing Current			Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	2.3	Plant trees of value to the Mount Graham red squirrel in areas between West Peak and the main population to enhance connectivity and dispersal habitat.	Not Started			Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	2.4	Return developed areas to habitat for Mount Graham red squirrel, as appropriate and supported by research (see 3.6. and 3.7.).	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Stakeholders Subgroups, Technical Subgroup of the Recovery Team, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Action would begin in FY 6 after research action 5.6. is completed. This action would extend for 50 or more years thereafter.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.1	Research the habitat requirements of the Mount Graham red squirrel during all life stages throughout the potential range in the Pinaleno Mountains.	Ongoing Current			Researchers	Work type not yet selected	Labor type not yet selected	

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.1	Conduct Population Viability Analysis for the Mount Graham red squirrel to inform the recovery criteria and develop scenarios for future management.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Stakeholders Subgroups, Technical Subgroup of the Recovery Team	Work type not yet selected	Labor type not yet selected	Additional costs may be incurred in later years if PHVA is conducted.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.11	Determine captive husbandry needs of the Mount Graham red squirrel with up to a total of 16 Mount Graham red squirrels.	Not Started			Researchers	Work type not yet selected	Labor type not yet selected	\$10K to each of 4 facilities for 3 years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.12	Design a captive breeding and repatriation program for Mount Graham red squirrel, which may include rotating animals in and out of the captive facility to increase genetic diversity and limit the opportunity for genetic adaptations to captive conditions.	Not Started			Researchers	Work type not yet selected	Labor type not yet selected	Includes genetic analysis of captive squirrels (to maintain Stud Book).
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.13	Locate funding and partners to implement the captive breeding and repatriation program.	Ongoing Current			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office	Work type not yet selected	Labor type not yet selected	Office time spent seeking partners and funding.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.2	Investigate and analyze the impact of avian predation on Mount Graham red squirrels.	Not Started			Researchers, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.3	Investigate and analyze the impact of mammalian predation on Mount Graham red squirrels.	Not Started			Researchers, Coronado National Forest	Work type not yet selected	Labor type not yet selected	

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.4	Investigate and analyze the effects of Aberts squirrels on Mount Graham red squirrels, including the possibility of reducing and/or eliminating the threat to the squirrel due to competition with the Aberts squirrel.	Not Started			Researchers, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	3	3.5	Investigate methods, including forest management measures, to control outbreaks of insects that could cause widespread damage to the remaining forest within Mount Graham red squirrel habitat.	Not Started			Researchers, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	3.6	Investigate the impact of the Columbine Summer Home and Bible Camp areas on habitat use by Mount Graham red squirrels.	Ongoing Current			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	3.7	Evaluate options for returning developed areas to habitat for the Mount Graham red squirrel.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	3.8	Investigate habitat availability and Mount Graham red squirrel presence on West Peak.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	3.9	Continue to collect remains of Mount Graham red squirrels for use in further research.	Ongoing Current			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Some minimal cost is assumed to collect and house red squirrel remains.

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	4.1	Hold annual meetings of the Technical and Stakeholder teams of the Recovery Team to review progress to date and develop work plans for future work.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Stakeholders Subgroups, Technical Subgroup of the Recovery Team	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	4.2	Meet regularly with the Pinaleno Partnerships to update them on the recovery effort and seek their input.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Stakeholders Subgroups, Technical Subgroup of the Recovery Team	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	4.3	Develop public information about the recovery program at zoological institutions, which may include (but not be limited to) informational kiosks, exhibiting red squirrels, and providing photos and video of captive-rearing efforts to the press and management agencies for educational use.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.1	During annual meetings of the Recovery Team, review monitoring and research data and make recommendations to revise the recovery strategy, criteria, and actions as appropriate.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Stakeholders Subgroups, Technical Subgroup of the Recovery Team, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Every 5 years update recovery program. Minor changes may be made annually.

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.1	Monitor and track area of available habitat within the range of the Mount Graham red squirrel in accordance with Appendix C.	Not Started			Researchers, U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest	Work type not yet selected	Labor type not yet selected	Acquire and analyze satellite imagery every 5 years, or after a major stochastic event (whichever is shorter), for 50 or more years.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.2	Continue rangewide Mount Graham red squirrel population monitoring at least once per year to track population trends, in accordance with Appendix A.	Ongoing Current			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	5.3	If implemented, monitor the progress of the captive breeding and repatriation program.	Not Started			Researchers	Work type not yet selected	Labor type not yet selected	Captive breeding would begin after husbandry needs are determined and plan is developed (3.11.-13.), if approved by the Recovery Team.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.4	Monitor the progress towards establishing a population of Mount Graham red squirrels on West Peak.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	If squirrels are found on West Peak, it will be added to the annual mountain-wide surveys.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.5	Monitor the effects of predation on the Mount Graham red squirrel.	Not Started			Researchers, Coronado National Forest	Work type not yet selected	Labor type not yet selected	
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.6	Monitor the population and distribution of Aberts squirrels in the Pinaleno Mountains and its effects on the Mount Graham red squirrel.	Not Started			Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	Begin monitoring when PERP begins and continue for 10 years.
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	2	5.7	Monitor the effects of browsing by ungulates in the Pinaleno Mountains.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Coronado National Forest, Arizona Game and Fish Department	Work type not yet selected	Labor type not yet selected	If ungulates are negatively affecting red squirrel habitat, implement recovery action 1.1.3.

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Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.8	Continue to monitor insects and pathogens in the Pinaleno Mountains.	Ongoing Current			Coronado National Forest	Work type not yet selected	Labor type not yet selected	Extending 50 or more years
Mount Graham red squirrel (Tamiasciurus hudsonicus grahamensis)	1	5.9	Compile an annual report that will track recovery progress and propose needed work.	Not Started			U.S. Fish and Wildlife Service, AZ Ecological Services Office, Stakeholders Subgroups, Technical Subgroup of the Recovery Team	Work type not yet selected	Labor type not yet selected	Extending 50 or more years